



Sequence Listing

- <110> Baker, Kevin Botstein, David Eaton, Dan Ferrara, Napoleone Filvaroff, Ellen Gerritsen, Mary Goddard, Audrey Godowski, Paul Grimaldi, Christopher Gurney, Austin Hillan, Kenneth Kljavin, Ivar Napier, Mary Roy, Margaret Tumas, Daniel Wood, William
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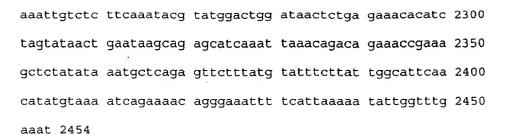


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Pro Arg Ser His Phe Phe Pro Phe Asp Leu Phe Pro Met Cys Pro 65 70 75

Phe Gly Cys Gln Cys Tyr Ser Arg Val Val His Cys Ser Asp Leu 80 85 90

Gly Leu Thr Ser Val Pro Thr Asn Ile Pro Phe Asp Thr Arg Met
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Leu Asp Leu Gln Asn Asn Lys Ile Lys Glu Ile Lys Glu Asn Asp 110 115 120

Phe Lys Gly Leu Thr Ser Leu Tyr Gly Leu Ile Leu Asn Asn Asn 125 130 135

Lys Leu Thr Lys Ile His Pro Lys Ala Phe Leu Thr Thr Lys Lys 140 145 150

Leu Arg Arg Leu Tyr Leu Ser His Asn Gln Leu Ser Glu Ile Pro 155 160 165

Leu Asn Leu Pro Lys Ser Leu Ala Glu Leu Arg Ile His Glu Asn 170 175 180

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Asp Glu Thr Trp His Pro Asp Leu Gly Gln Pro Phe Gly Val Met
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His	Ile	Ala	Asn	Glr 650		s Glu	ı Val	Gly	Gly 655		ı Arg	J Let	Glu	Ala 660





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Gly	Glu	Gly	Cys	Tyr 785	Phe	Asp	Gly	Asp	Arg 790	Ser	Trp	Arg	Ala	Ala 795
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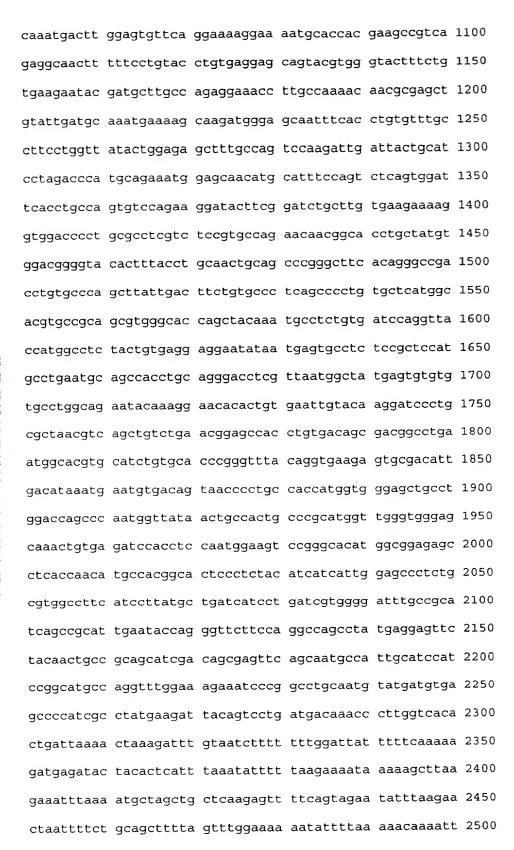




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<211> 737

<212> PRT

<213> Homo Sapien

<400> 15

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20 25 30

Ser Ser Leu Ala Asn Pro Val Pro Ala Ala Pro Leu Ser Ala Pro 45

Gly Pro Cys Ala Ala Gln Pro Cys Arg Asn Gly Gly Val Cys Thr 50 55 60

Ser Arg Pro Glu Pro Asp Pro Gln His Pro Ala Pro Ala Gly Glu
65 70 75

Pro Gly Tyr Ser Cys Thr Cys Pro Ala Gly Ile Ser Gly Ala Asn 80 85 90

Cys Gln Leu Val Ala Asp Pro Cys Ala Ser Asn Pro Cys His His
95 100 105

Gly Asn Cys Ser Ser Ser Ser Ser Ser Ser Ser Asp Gly Tyr Leu





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Leu	Pro	Ser	Leu	Pro 140	Ala	Thr	Gly	Trp	Thr 145	Glu	Ser	Met	Ala	Pro 150
Arg	Gln	Leu	Gln	Pro 155	Val	Pro	Ala	Thr	Gln 160	Glu	Pro	Asp	Lys	Ile 165
Leu	Pro	Arg	Ser	Gln 170	Ala	Thr	Val	Thr	Leu 175	Pro	Thr	Trp	Gln	Pro 180
Lys	Thr	Gly	Gln	Lys 185	Val	Val	Glu	Met	Lys 190	Trp	Asp	Gln	Val	Glu 195
Val	Ile	Pro	Asp	Ile 200	Ala	Cys	Gly	Asn	Ala 205	Ser	Ser	Asn	Ser	Ser 210
Ala	Gly	Gly	Arg	Leu 215	Val	Ser	Phe	Glu	Val 220	Pro	Gln	Asn	Thr	Ser 225
Val	Lys	Ile	Arg	Gln 230	Asp	Ala	Thr	Ala	Ser 235	Leu	Ile	Leu	Leu	Trp 240
Lys	Val	Thr	Ala	Thr 245	Gly	Phe	Gln	Gln	Cys 250	Ser	Leu	Ile	Asp	Gly 255
Arg	Ser	Val	Thr	Pro 260	Leu	Gln	Ala	Ser	Gly 265	Gly	Leu	Val	Leu	Leu 270
Glu	Glu	Met	Leu	Ala 275	Leu	Gly	Asn	Asn	His 280	Phe	Ile	Gly	Phe	Val 285
Asn	Asp	Ser	Val	Thr 290		Ser	Ile	Val	Ala 295	Leu	Arg	Leu	Thr	Leu 300
Val	Val	Lys	Val	Ser 305		Cys	Val	Pro	Gly 310	Glu	Ser	His	Ala	Asn 315
Asp	Leu	Glu	Cys	Ser 320		· Lys	Gly	Lys	Cys 325	Thr	Thr	Lys	Pro	Ser 330
Glu	Ala	Thr	Phe	Ser 335		Thr	- Cys	Glu	Glu 340	Gln	Tyr	Val	Gly	Thr 345
Phe	Cys	Glu	Glu	Tyr 350		Ala	Cys	Gln	Arg 355	Lys	Pro	Cys	Gln	Asn 360
Asn	Ala	Ser	· Cys	: Il∈ 365		Ala	Asn	Glu	Lys 370		Asp	Gly	Ser	375
Phe	Thr	: Cys	: Val	. Cys		Pro	Gly	Tyr	Thr 385		Glu	Leu	суя	390
Ser	Lys	: Ile	Asp	395		; Ile	e Leu	Asp	Pro 400		Arg	, Asr	ı Gly	Ala 405



Thr	Cys	Ile	Ser	Ser 410	Leu	Ser	Gly	Phe	Thr 415	Cys	Gln	Cys	Pro	Glu 420
Gly	Tyr	Phe	Gly	Ser 425	Ala	Cys	Glu	Glu	Lys 430	Val	Asp	Pro	Cys	Ala 435
Ser	Ser	Pro	Cys	Gln 440	Asn	Asn	Gly	Thr	Cys 445	Tyr	Val	Asp	Gly	Val 450
His	Phe	Thr	Cys	Asn 455	Cys	Ser	Pro	Gly	Phe 460	Thr	Gly	Pro	Thr	Cys 465
Ala	Gln	Leu	Ile	Asp 470	Phe	Cys	Ala	Leu	Ser 475	Pro	Суѕ	Ala	His	Gly 480
Thr	Cys	Arg	Ser	Val 485	Gly	Thr	Ser	Tyr	Lys 490	Cys	Leu	Сув	Asp	Pro 495
Gly	Tyr	His	Gly	Leu 500	Tyr	Cys	Glu	Glu	Glu 505	Tyr	Asn	Glu	Cys	Leu 510
Ser	Ala	Pro	Cys	Leu 515	Asn	Ala	Ala	Thr	Cys 520	Arg	Asp	Leu	Val	Asn 525
Gly	Tyr	Glu	Cys	Val 530	Cys	Leu	Ala	Glu	Tyr 535	Lys	Gly	Thr	His	Cys 540
Glu	Leu	Tyr	Lys	Asp 545	Pro	Суз	Ala	Asn	Val 550	Ser	Cys	Leu	Asn	Gly 555
Ala	Thr	Cys	Asp	Ser 560	Asp	Gly	Leu	Asn	Gly 565	Thr	Cys	Ile	Cys	Ala 570
Pro	Gly	Phe	Thr	Gly 575	Glu	Glu	Cys	Asp	Ile 580		Ile	Asn	. Glu	Cys 585
Asp	Ser	Asn	Pro	Cys 590	His	His	Gly	Gly	Ser 595		Leu	Asp	Gln	Pro 600
Asn	Gly	Tyr	Asn	Cys 605	His	Cys	Pro	His	Gly 610		Val	Gly	· Ala	Asn 615
Cys	Glu	. Ile	His	Leu 620		Trp	Lys	Ser	Gly 625		Met	. Ala	Glu	Ser 630
Leu	Thr	Asn	. Met	Pro 635		His	Ser	Leu	Tyr 640		e Ile	e Ile	e Gly	Ala 645
Leu	Cys	: Val	Ala	Phe 650		Leu	Met	Leu	11e 655		e Lev	ı Ile	e Val	Gly 660
Ile	Суз	arg	ıle	Ser 665		Ile	Glu	Tyr	670		/ Ser	Ser	r Arg	9 Pro 675
Ala	Туг	Glu	ı Glu	Phe 680		Asn	Cys	Arg	Ser 685		e Asp	Ser	c Glu	Phe 690
Ser	Asr	n Ala	ılle	e Ala	Ser	Ile	Arg	His	. Ala	Arg	g Phe	e Gly	/ Lys	s Lys

695 700 705

Ser Arg Pro Ala Met Tyr Asp Val Ser Pro Ile Ala Tyr Glu Asp
710 715 720

Tyr Ser Pro Asp Asp Lys Pro Leu Val Thr Leu Ile Lys Thr Lys 725 730 735

Asp Leu

<210> 16

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 16

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<210> 17

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

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<210> 18

<211> 508

<212> DNA

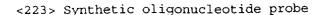
<213> Homo Sapien

<400> 18

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tctgtgacta agtctattgt ggctttgcgc ttaactctgg tggtgaaggt 200
cagcacctgt gtgccggggg agagtcacgc aaatgacttg gagtgttcag 250
gaaaaggaaa atgcaccacg aagccgtcag aggcaacttt ttcctgtacc 300
tgtgaggagc agtacgtggg tactttctgt gaagaatacg atgcttgcca 350
gaggaaacct tgccaaaaca acgcgagctg tattgatgca aatgaaaagc 400
aagatgggag caatttcacc tgtgtttgcc ttcctggtta tactggagag 500
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gctttgccaa ccgaactga 69

<210> 23

<211> 1520

<212> DNA

<213> Homo Sapien

<400> 23

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gaaaaggtac aggaagaaaa caaatggcaa agccccttgg aggacaagtt 1200 ceeggatgag cagetgagca gtteetgeea eteegacete teaegtetge 1250 gteagagaaa gagtetgaet teaggeeagg aacteaetga gatteecata 1300 caetggacag ecaagttace agceaagtgg teagteteag agteeteeee 1350 ceacatggee ecagteettg eagttgtgge eacetteeea gteettatte 1400 tgtggetetg atgaceeagt tagteetgee agatgteaet gtageaagee 1450 acagacaeee eacaaagtte eeetgttgtg eaggeacaaa tatteetga 1500 aataaatgtt ttggacatag 1520

<210> 24

<211> 433

<212> PRT

<213> Homo Sapien

<400> 24

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Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln 35 40 45

Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser 50 55 60

Tyr Gly Gln Thr Ser Leu Asp Arg Leu Arg Asp Gly Leu Val Gly 65 70 75

Ala Gln Phe Trp Ser Ala Tyr Val Pro Cys Gln Thr Gln Asp Arg 80 85 90

Asp Ala Leu Arg Leu Thr Leu Glu Gln Ile Asp Leu Ile Arg Arg 95 100 105

Met Cys Ala Ser Tyr Ser Glu Leu Glu Leu Val Thr Ser Ala Lys

Ala Leu Asn Asp Thr Gln Lys Leu Ala Cys Leu Ile Gly Val Glu 125 130 135

Gly Gly His Ser Leu Asp Asn Ser Leu Ser Ile Leu Arg Thr Phe 140 145 150

Tyr Met Leu Gly Val Arg Tyr Leu Thr Leu Thr His Thr Cys Asn 155 160 165

Thr Pro Trp Ala Glu Ser Ser Ala Lys Gly Val His Ser Phe Tyr 170 175 180





Asn Asn	Ile	Ser	Gly 185	Leu	Thr	Asp	Phe	Gly 190	Glu	Lys	Val	Val	Ala 195
Glu Met	Asn	Arg	Leu 200	Gly	Met	Met	Val	Asp 205	Leu	Ser	His	Val	Ser 210
Asp Ala	Val	Ala	Arg 215	Arg	Ala	Leu	Glu	Val 220	Ser	Gln	Ala	Pro	Val 225
Ile Phe	Ser	His	Ser 230	Ala	Ala	Arg	Gly	Val 235	Cys	Asn	Ser	Ala	Arg 240
Asn Val	Pro	Asp	Asp 245	Ile	Leu	Gln	Leu	Leu 250	Lys	Lys	Asn	Gly	Gly 255
Val Val	Met	Val	Ser 260	Leu	Ser	Met	Gly	Val 265	Ile	Gln	Cys	Asn	Pro 270
Ser Ala	Asn	Val	Ser 275	Thr	Val	Ala	Asp	His 280	Phe	Asp	His	Ile	Lys 285
Ala Val	Ile	Gly	Ser 290	Lys	Phe	Ile	Gly	Ile 295	Gly	Gly	Asp	Tyr	Asp 300
Gly Ala	Gly	Lys	Phe 305	Pro	Gln	Gly	Leu	Glu 310	Asp	Val	Ser	Thr	Tyr 315
Pro Val	Leu	Ile	Glu 320	Glu	Leu	Leu	Ser	Arg 325	Gly	Trp	Ser	Glu	Glu 330
Glu Leu	Gln	Gly	Val 335	Leu	Arg	Gly	Asn	Leu 340	Leu	Arg	Val	Phe	Arg 345
Gln Val	Glu	Lys	Val 350		Glu	Glu	Asn	Lys 355	Trp	Gln	Ser	Pro	Leu 360
Glu Asp	Lys	Phe	Pro 365	_	Glu	Gln	Leu	Ser 370	Ser	Ser	Cys	His	Ser 375
Asp Leu	Ser	Arg	Leu 380		Gln	Arg	Gln	Ser 385		Thr	Ser	Gly	Gln 390
Glu Leu	Thr	Glu	Ile 395		Ile	His	Trp	Thr 400		Lys	Leu	Pro	Ala 405
Lys Trp	Ser	Val	Ser 410		Ser	Ser	Pro	His 415		Ala	. Pro	Val	Leu 420
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- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe

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cctcctattc tgagctggag cttgtgacct cggctaaagc tctgaacgac 450 actcagaaat tggcctgcct catcggtgta gagggtggcc actcgctgga 500 caatageete tecatettae gtacetteta catgetggga gtgcgctace 550 tgacgeteae ecacacetge aacacaceet gggcagagag eteegetaag 600 ggcgtccact ccttctacaa caacatcagc gggctgactg actttggtga 650 gaaggtggtg gcagaaatga accgeetggg catgatggta gaettateee 700 atgteteaga tgetgtggea eggegggeee tggaagtgte acaggeacet 750 gtgatettet eccaetegge tgeeeggggt gtgtgeaaca gtgeteggaa 800 tgttcctgat gacatcctgc agcttctgaa gaagaacggt ggcgtcgtga 850 tggtgtcttt gtccatggga gtaatacagt gcaacccatc agccaatgtg 900 tocactgtgg cagatoactt cgaccacatc aaggotgtca ttggatocaa 950 gttcatcggg attggtggag attatgatgg ggccggcaaa ttccctcagg 1000 ggctggaaga cgtgtccaca tacccggtcc tgatagagga gttgctgagt 1050 cgtggctgga gtgaggaaga gcttcagggt gtccttcgtg gaaacctgct 1100 gcgggtcttc agacaagtgg aaaaggtaca ggaagaaaac aaatggcaaa 1150 gccccttgga ggacaagttc ccggatgagc agctgagcag ttcctgccac 1200 tecgaectet cacqtetqcq teaqaqacaq aqtetgaett caggecagga 1250 actcactgag attcccatac actggacagc caagttacca gccaagtggt 1300 cagteteaga gteeteeece caecetgaca aaacteacae atgeecaceg 1350 tgcccaqcac ctgaactcct ggggggaccg tcagtcttcc tcttcccccc 1400 aaaacccaag gacacc 1416

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<211> 446

<212> PRT

<213> Homo Sapien

<400> 30

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Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln 35 40 45

Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser

				50					55					60
Tyr	Gly	Gln	Thr	Ser 65	Leu	Asp	Arg	Leu	Arg 70	Asp	Gly	Leu	Val	Gly 75
Ala	Gln	Phe	Trp	Ser 80	Ala	Tyr	Val	Pro	Cys 85	Gln	Thr	Gln	qaA	Arg 90
Asp	Ala	Leu	Arg	Leu 95	Thr	Leu	Glu	Gln	Ile 100	Asp	Leu	Ile	Arg	Arg 105
Met	Cys	Ala	Ser	Tyr 110	Ser	Glu	Leu	Glu	Leu 115	Val	Thr	Ser	Ala	Lys 120
Ala	Leu	Asn	Asp	Thr 125	Gln	Lys	Leu	Ala	Cys 130	Leu	Ile	Gly	Val	Glu 135
Gly	Gly	His	Ser	Leu 140	Asp	Asn	Ser	Leu	Ser 145	Ile	Leu	Arg	Thr	Phe 150
Tyr	Met	Leu	Gly	Val 155	Arg	Tyr	Leu	Thr	Leu 160		His	Thr	Cys	Asn 165
Thr	Pro	Trp	Ala	Glu 170	Ser	Ser	Ala	Lys	Gly 175		His	Ser	Phe	Tyr 180
Asn	Asn	Ile	Ser	Gly 185		Thr	Asp	Phe	Gly 190		Lys	Val	Val	Ala 195
Glu	Met	Asn	Arg	Leu 200		Met	Met	Val	Asp 205		Ser	His	Val	Ser 210
Asp	Ala	Val	Ala	Arg 215		Ala	Leu	Glu	Val 220		Gln	Ala	Pro	Val 225
Ile	Phe	Ser	His	Ser 230		Ala	Arg	Gly	Val 235		Asn	Ser	Ala	Arg 240
Asn	Val	Pro	Asp	Asp 245		Leu	Gln	Leu	Leu 250		Lys	: Asr	ı Gly	Gly 255
Val	Val	Met	Val	Ser 260		Ser	Met	Gly	Val 265		e Glr	ı Cys	s Asr	270
Ser	Ala	Asn	Val	Ser 275		: Val	Ala	Asp	His 280		e Asp	His	s Ile	285
Ala	Val	Ile	Gly	Ser 290		Phe	: Ile	Gly	7 Ile 295		/ Gly	/ Ası	р Туі	300
Gly	Ala	Gly	Lys	305		Glr	n Gly	Leu	310		y Val	l Se	r Thi	Tyr 315
Pro	Val	. Lev	ı Ile	Glu 320		ı Lev	ı Lev	s Ser	325		y Trp	Se:	r Glu	330
Glu	ı Leu	Glr	ı Gly	7 Val		ı Arç	g Gly	/ Asr	1 Let 340		ı Arç	g Va	l Phe	e Arg 345





Gln	Val	Glu	Lys	Val 350	Gln	Glu	Glu	Asn	Lys 355	Trp	Gln	Ser	Pro	Leu 360
Glu	Asp	Lys	Phe	Pro 365	Asp	Glu	Gln	Leu	Ser 370	Ser	Ser	Суѕ	His	Ser 375
Asp	Leu	Ser	Arg	Leu 380	Arg	Gln	Arg	Gln	Ser 385	Leu	Thr	Ser	Gly	Gln 390
Glu	Leu	Thr	Glu	Ile 395	Pro	Ile	His	Trp	Thr 400	Ala	Lys	Leu	Pro	Ala 405
Lys	Trp	Ser	Val	Ser	Glu	Ser	Ser	Pro	His 415	Pro	Asp	Lys	Thr	His 420
Thr	Cys	Pro	Pro	Cys 425	Pro	Ala	Pro	Glu	Leu 430	Leu	Gly	Gly	Pro	Ser 435
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<210> 31

<211> 1790

<212> DNA

<400> 31

<213> Homo Sapien

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teetegggge geeggagee ggateaggag eecaacaage tgtgateagt 250
ceecaggate eeaeegettet eateggetee teeetgetgg eeaeetgete 300
agtgeaegga gaceeaeeag gageeaeege egagggeete taetggaeee 350
teaaegggeg eegeetgee eetgagetee teeetgetgg eeaeetgete 350
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acettggete tggeeetgge eaaeeteaa gggteeagge ageggeegg 450
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teeaagaaca tgaaggaett gaeetgeeg tggaegeeag gggeeeaegg 600
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atggccagga caacacatgt gaggagtacc acacagtggg gccccactcc 700

tgccacatcc ccaaggacct ggctctcttt acgccctatg agatctgggt 750

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cgcccagcga cgtgcgggcg gcctggcccg cgccctcccg cgcccggcct 50



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<210> 32

<211> 422

<212> PRT

<213> Homo Sapien

<400> 32

Met Pro Ala Gly Arg Arg Gly Pro Ala Ala Gln Ser Ala Arg Arg 1 5 10 15

Pro Pro Pro Leu Leu Pro Leu Leu Leu Leu Cys Val Leu Gly 20 25 30

Ala Pro Arg Ala Gly Ser Gly Ala His Thr Ala Val Ile Ser Pro 35 40 45

Gln Asp Pro Thr Leu Leu Ile Gly Ser Ser Leu Leu Ala Thr Cys
50 55 60

Ser Val His Gly Asp Pro Pro Gly Ala Thr Ala Glu Gly Leu Tyr Trp Thr Leu Asn Gly Arg Arg Leu Pro Pro Glu Leu Ser Arg Val Leu Asn Ala Ser Thr Leu Ala Leu Ala Leu Ala Asn Leu Asn Gly 95 Ser Arg Gln Arg Ser Gly Asp Asn Leu Val Cys His Ala Arg Asp 110 Gly Ser Ile Leu Ala Gly Ser Cys Leu Tyr Val Gly Leu Pro Pro Glu Lys Pro Val Asn Ile Ser Cys Trp Ser Lys Asn Met Lys Asp 145 Leu Thr Cys Arg Trp Thr Pro Gly Ala His Gly Glu Thr Phe Leu His Thr Asn Tyr Ser Leu Lys Tyr Lys Leu Arg Trp Tyr Gly Gln Asp Asn Thr Cys Glu Glu Tyr His Thr Val Gly Pro His Ser Cys His Ile Pro Lys Asp Leu Ala Leu Phe Thr Pro Tyr Glu Ile Trp 210 Val Glu Ala Thr Asn Arg Leu Gly Ser Ala Arg Ser Asp Val Leu 215 Thr Leu Asp Ile Leu Asp Val Val Thr Thr Asp Pro Pro Pro Asp 230 235 240 Val His Val Ser Arg Val Gly Gly Leu Glu Asp Gln Leu Ser Val 245 Arg Trp Val Ser Pro Pro Ala Leu Lys Asp Phe Leu Phe Gln Ala 260 Lys Tyr Gln Ile Arg Tyr Arg Val Glu Asp Ser Val Asp Trp Lys Val Val Asp Asp Val Ser Asn Gln Thr Ser Cys Arg Leu Ala Gly 300 295 Leu Lys Pro Gly Thr Val Tyr Phe Val Gln Val Arg Cys Asn Pro Phe Gly Ile Tyr Gly Ser Lys Lys Ala Gly Ile Trp Ser Glu Trp 330 320 Ser His Pro Thr Ala Ala Ser Thr Pro Arg Ser Glu Arg Pro Gly Pro Gly Gly Gly Ala Cys Glu Pro Arg Gly Glu Pro Ser Ser

350 355 360

Gly Pro Val Arg Arg Glu Leu Lys Gln Phe Leu Gly Trp Leu Lys 365 370 375

Lys His Ala Tyr Cys Ser Asn Leu Ser Phe Arg Leu Tyr Asp Gln 380 385 390

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Glu Gly Ile Leu Pro Ser Gly Arg Arg Gly Thr Ala Arg Gly Pro 410 415 420

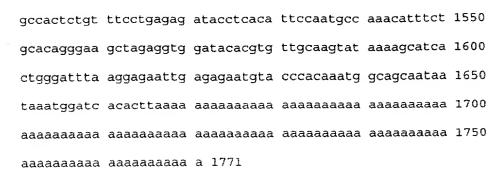
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- <212> DNA
- <213> Artificial Sequence
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- <210> 34
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- <212> DNA
- <213> Artificial Sequence
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- <223> Synthetic oligonucleotide probe
- <400> 34
- tgagccagcc caggaactgc ttg 23
- <210> 35
- <211> 50
- <212> DNA
- <213> Artificial Sequence
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- <400> 35
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- <210> 36
- <211> 1771
- <212> DNA
- <213> Homo Sapien
- <400> 36
- cccacgcgtc cgctggtgtt agatcgagca accctctaaa agcagtttag 50





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<210> 37

<211> 300

<212> PRT

<213> Homo Sapien

<400> 37

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Val Cys Ser Leu Glu Ser Phe Val Lys Leu Phe Ile Pro Lys Arg
20 25 30

Arg Lys Ser Val Thr Gly Glu Ile Val Leu Ile Thr Gly Ala Gly
35 40 45

His Gly Ile Gly Arg Leu Thr Ala Tyr Glu Phe Ala Lys Leu Lys 50

Ser Lys Leu Val Leu Trp Asp Ile Asn Lys His Gly Leu Glu Glu 65 70 75

Thr Ala Ala Lys Cys Lys Gly Leu Gly Ala Lys Val His Thr Phe 80 85 90

Val Val Asp Cys Ser Asn Arg Glu Asp Ile Tyr Ser Ser Ala Lys 95 100 105

Lys Val Lys Ala Glu Ile Gly Asp Val Ser Ile Leu Val Asn Asn 110 115 120

Ala Gly Val Val Tyr Thr Ser Asp Leu Phe Ala Thr Gln Asp Pro 125 130 135

Gln Ile Glu Lys Thr Phe Glu Val Asn Val Leu Ala His Phe Trp 140 145 150

Thr Thr Lys Ala Phe Leu Pro Ala Met Thr Lys Asn Asn His Gly
155 160 165

His Ile Val Thr Val Ala Ser Ala Ala Gly His Val Ser Val Pro 170 175 180

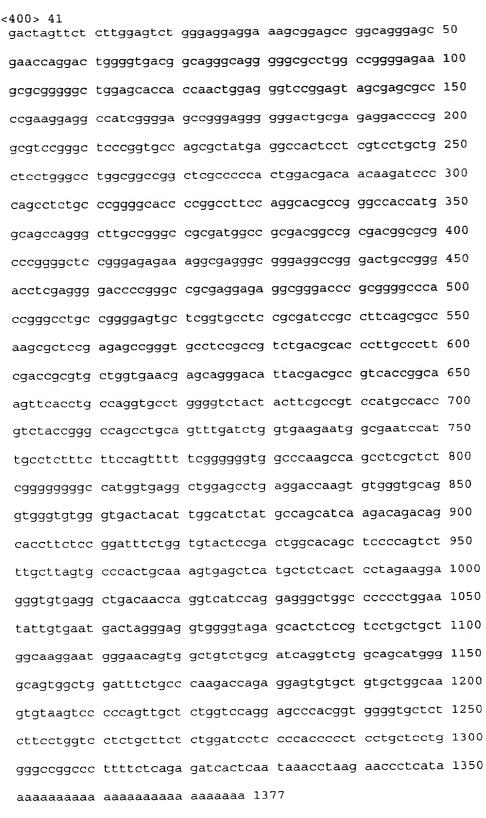
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His Lys Thr Leu Thr Asp Glu Leu Ala Ala Leu Gln Ile Thr Gly

<212> DNA

<213> Homo Sapien

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<210> 42



<211> 243

<212> PRT

<213> Homo Sapien

<400> 42

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1 5 10 15

Ser Pro Pro Leu Asp Asp Asn Lys Ile Pro Ser Leu Cys Pro Gly 20 25 30

His Pro Gly Leu Pro Gly Thr Pro Gly His His Gly Ser Gln Gly

Leu Pro Gly Arg Asp Gly Arg Asp Gly Arg Asp Gly Ala Pro Gly 50 55 60

Ala Pro Gly Glu Lys Gly Glu Gly Gly Arg Pro Gly Leu Pro Gly
65 70 75

Pro Arg Gly Asp Pro Gly Pro Arg Gly Glu Ala Gly Pro Ala Gly 80 85 90

Pro Thr Gly Pro Ala Gly Glu Cys Ser Val Pro Pro Arg Ser Ala 95 100 105

Phe Ser Ala Lys Arg Ser Glu Ser Arg Val Pro Pro Pro Ser Asp 110 115 120

Ala Pro Leu Pro Phe Asp Arg Val Leu Val Asn Glu Gln Gly His
125 130 135

Tyr Asp Ala Val Thr Gly Lys Phe Thr Cys Gln Val Pro Gly Val
140 145 150

Tyr Tyr Phe Ala Val His Ala Thr Val Tyr Arg Ala Ser Leu Gln
155 160 165

Phe Asp Leu Val Lys Asn Gly Glu Ser Ile Ala Ser Phe Phe Gln 170 175 180

Phe Phe Gly Gly Trp Pro Lys Pro Ala Ser Leu Ser Gly Gly Ala 185 190 195

Met Val Arg Leu Glu Pro Glu Asp Gln Val Trp Val Gln Val Gly 200 205 210

Val Gly Asp Tyr Ile Gly Ile Tyr Ala Ser Ile Lys Thr Asp Ser 215 220 225

Thr Phe Ser Gly Phe Leu Val Tyr Ser Asp Trp His Ser Ser Pro 230 235 240

Val Phe Ala

<210> 43 <211> 24

<212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 43 tacaggecca gtcaggacca gggg 24 <210> 44 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 44 agecagecte getetegg 18 <210> 45 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 45 gtctgcgatc aggtctgg 18 <210> 46 <211> 20 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 46 gaaagaggca atggattcgc 20 <210> 47 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 47 gacttacact tgccagcaca gcac 24 <210> 48 <211> 45 <212> DNA <213> Artificial Sequence





<220>
<223> Synthetic oligonucleotide probe

<400> 48
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<210> 49

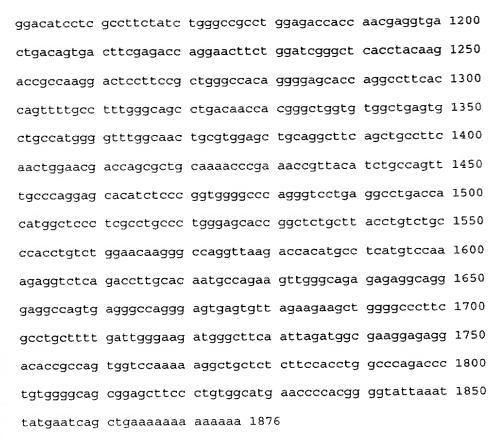
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<212> DNA

<213> Homo Sapien

<400> 49

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<211> 455

<212> PRT

<213> Homo Sapien

<400> 50

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Val Leu Leu Ala Leu Leu Gly Thr Thr Trp Ala Glu Val Trp Pro 20 25 30

Pro Gln Leu Gln Glu Gln Ala Pro Met Ala Gly Ala Leu Asn Arg 35 40 45

Lys Glu Ser Phe Leu Leu Leu Ser Leu His Asn Arg Leu Arg Ser
50 55 60

Trp Val Gln Pro Pro Ala Ala Asp Met Arg Arg Leu Asp Trp Ser
65 70 75

Asp Ser Leu Ala Gln Leu Ala Gln Ala Arg Ala Ala Leu Cys Gly 80 85 90

Ile Pro Thr Pro Ser Leu Ala Ser Gly Leu Trp Arg Thr Leu Gln 95 100 105

Val Gly Trp Asn Met Gln Leu Leu Pro Ala Gly Leu Ala Ser Phe

				110					115					120
Val	Glu	Val	Val	Ser 125	Leu	Trp	Phe	Ala	Glu 130	Gly	Gln	Arg	Tyr	Ser 135
His	Ala	Ala	Gly	Glu 140	Cys	Ala	Arg	Asn	Ala 145	Thr	Cys	Thr	His	Tyr 150
Thr	Gln	Leu	Val	Trp 155	Ala	Thr	Ser	Ser	Gln 160	Leu	Gly	Cys	Gly	Arg 165
His	Leu	Cys	Ser	Ala 170	Gly	Gln	Thr	Ala	Ile 175	Glu	Ala	Phe	Val	Cys 180
Ala	Tyr	Ser	Pro	Gly 185	Gly	Asn	Trp	Glu	Val 190	Asn	Gly	Lys	Thr	Ile 195
Ile	Pro	Tyr	Lys	Lys 200	Gly	Ala	Trp	Cys	Ser 205	Leu	Суз	Thr	Ala	Ser 210
Val	Ser	Gly	Cys	Phe 215	Lys	Ala	Trp	Asp	His 220	Ala	Gly	Gly	Leu	Cys 225
Glu	Val	Pro	Arg	Asn 230	Pro	Cys	Arg	Met	Ser 235	Суз	Gln	Asn	His	Gly 240
Arg	Leu	Asn	Ile	Ser 245	Thr	Суѕ	His	Cys	His 250	Сув	Pro	Pro	Gly	Tyr 255
Thr	Gly	Arg	Tyr	Cys 260	Gln	Val	Arg	Cys	Ser 265		Gln	Cys	Val	His 270
Gly	Arg	J Ph∈	Arg	Glu 275	Glu	Glu	Cys	Ser	Cys 280	Val	Cys	Asp	ıle	Gly 285
Tyr	Gly	/ Gly	Ala	Gln 290	Cys	Ala	Thr	Lys	Val 295	His	Phe	Pro) Phe	His 300
Thr	Сув	s Asp	Lev	ı Arg 305	Ile	Asp	Gly	Asp	310		Met	: Val	. Ser	Ser 315
Glu	ı Ala	a Asp	Thi	320	Tyr	Arg	Ala	. Arg	325		суя	s Glr	ı Arç	330
Gly	/ Gly	y Val	L Lev	1 Ala 335		Ile	Lys	Ser	Glr 340		s Val	l Glr	n Asp	345
Leu	ı Ala	a Phe	э Туг	r Leu 350		Arg	Leu	ı Glu	359		Ası	n Glu	ı Val	360
Ası	Se:	r Ası	p Phe	e Glu 365		Arg	Asr	n Phe	370		e Gly	y Le	u Th	7yr 375
Lys	5 Th	r Al	a Ly	s Asp 380		Phe	e Arg	g Trp	9 Ala 38	a Th:	r Gly	y Gl	u Hi:	s Gln 390
Ala	a Ph	e Th	r Se	r Phe 395		a Phe	e Gly	y Gli	n Pro		p Ası	n Hi	s Gl	y Leu 405

Val Trp Leu Ser Ala Ala Met Gly Phe Gly Asn Cys Val Glu Leu
410 415 420

Gln Ala Ser Ala Ala Phe Asn Trp Asn Asp Gln Arg Cys Lys Thr 425 430 435

Arg Asn Arg Tyr Ile Cys Gln Phe Ala Gln Glu His Ile Ser Arg
440 445 450

Trp Gly Pro Gly Ser 455

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<211> 24

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 51

aggaacttct ggatcgggct cacc 24

<210> 52

<211> 24

<212> DNA

<213> Artificial Sequence

<220:

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<400> 52

gggtctgggc caggtggaag agag 24

<210> 53

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 53

gccaaggact cetteegetg ggccacaggg gagcaccagg cette 45

<210> 54

<211> 2331

<212> DNA

<213> Homo Sapien

<400> 54

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aggetgaaaa ecaaacettt gatgacagaa tteteagtga agtetaecat 250 catttcccgt tatgccttca ctacggtttc ctgcagaatg ctgaacagag 300 cttctgaaga ccaggacatt gagttccaga tgcagattcc agctgcagct 350 ttcatcacca acttcactat gettattgga gacaaggtgt atcagggcga 400 aattacagag agagaaaaga agagtggtga tagggtaaaa gagaaaagga 450 ataaaaccac agaagaaaat ggagagaagg ggactgaaat attcagagct 500 tetgeagtga tteccageaa ggaeaaagee geetttttee tgagttatga 550 ggagettetg cagaggegee tgggcaagta egageacage atcagegtge 600 ggccccagca gctgtccggg aggctgagcg tggacgtgaa tatcctggag 650 agegegggea tegeatecet ggaggtgetg cegetteaca acageaggea 700 gaggggcagt gggcgcgggg aagatgattc tgggcctccc ccatctactg 750 tcattaacca aaatgaaaca tttgccaaca taatttttaa acctactgta 800 gtacaacaag ccaggattgc ccagaatgga attttgggag actttatcat 850 tagatatgac gtcaatagag aacagagcat tggggacatc caggttctaa 900 atggetattt tgtgeactae tttgeteeta aagaeettee teetttaeee 950 aagaatgtgg tattegtget tgacageagt gettetatgg tgggaaceaa 1000 acteeggeag accaaggatg cectetteae aatteteeat gaeeteegae 1050 cccaggaccg tttcagtatc attggatttt ccaaccggat caaagtatgg 1100 aaggaccact tgatatcagt cactccagac agcatcaggg atgggaaagt 1150 gtacattcac catatgtcac ccactggagg cacagacatc aacggggccc 1200 tgcagagggc catcaggctc ctcaacaagt acgtggccca cagtggcatt 1250 ggagaccgga gcgtgtccct catcgtcttc ctgacggatg ggaagcccac 1300 ggtcggggag acgcacaccc tcaagatcct caacaacacc cgagaggccg 1350 cccgaggcca agtctgcatc ttcaccattg gcatcggcaa cgacgtggac 1400 ttcaggctgc tggagaaact gtcgctggag aactgtggcc tcacacggcg 1450 cgtgcacgag gaggaggacg caggctcgca gctcatcggg ttctacgatg 1500 aaatcaggac cccgctcctc tctgacatcc gcatcgatta tccccccagc 1550 tragtggtgc aggreaceaa gaccetgtte cecaactact traacggete 1600 ggagatcatc attgcgggga agctggtgga caggaagctg gatcacctgc 1650

<210> 55

<211> 694

<212> PRT

<213> Homo Sapien

<400> 55

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Asp Gly Leu Arg Val Pro Arg Gln Val Arg Leu Leu Gln Arg Leu
35 40 45

Lys Thr Lys Pro Leu Met Thr Glu Phe Ser Val Lys Ser Thr Ile
50 55 60

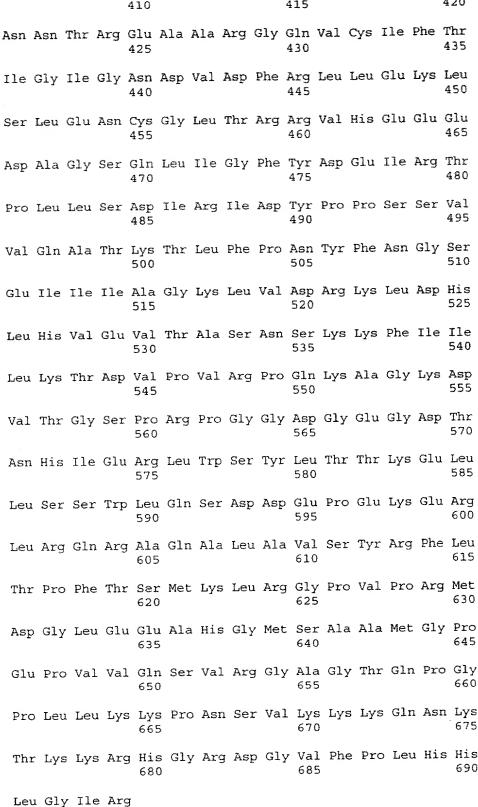
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65 70 75

Arg Ala Ser Glu Asp Gln Asp Ile Glu Phe Gln Met Gln Ile Pro 80 85 90

Ala Ala Ala Phe Ile Thr Asn Phe Thr Met Leu Ile Gly Asp Lys 95 100 105

Val Tyr Gln Gly Glu Ile Thr Glu Arg Glu Lys Lys Ser Gly Asp $110 \,$ 115 $\,$ 120

Arg	Val	Lys	Glu	Lys 125	Arg	Asn	Lys	Thr	Thr 130	Glu	Glu	Asn	Gly	Glu 135
Lys	Gly	Thr	Glu	Ile 140	Phe	Arg	Ala	Ser	Ala 145	Val	Ile	Pro	Ser	Lys 150
Asp	Lys	Ala	Ala	Phe 155	Phe	Leu	Ser	Tyr	Glu 160	Glu	Leu	Leu	Gln	Arg 165
Arg	Leu	Gly	Lys	Tyr 170	Glu	His	Ser	Ile	Ser 175	Val	Arg	Pro	Gln	Gln 180
Leu	Ser	Gly	Arg	Leu 185	Ser	Val	Asp	Val	Asn 190	Ile	Leu	Glu	Ser	Ala 195
Gly	Ile	Ala	Ser	Leu 200	Glu	Val	Leu	Pro	Leu 205	His	Asn	Ser	Arg	Gln 210
Arg	Gly	Ser	Gly	Arg 215	Gly	Glu	Asp	Asp	Ser 220	Gly	Pro	Pro	Pro	Ser 225
Thr	Val	Ile	Asn	Gln 230	Asn	Glu	Thr	Phe	Ala 235	Asn	Ile	Ile	Phe	Lys 240
Pro	Thr	Val	Val	Gln 245	Gln	Ala	Arg	Ile	Ala 250	Gln	Asn	Gly	Ile	Leu 255
Gly	Asp	Phe	lle	1le 260	Arg	Tyr	Asp	Val	Asn 265	Arg	Glu	Gln	Ser	Ile 270
Gly	Asp	Il∈	e Gln	Val 275	Leu	Asn	Gly	Tyr	Phe 280		His	Tyr	Phe	Ala 285
Pro	Lys	a Asp	Lev	Pro 290	Pro	Leu	Pro	Lys	Asn 295		. Val	. Phe	· Val	Leu 300
Asp	Ser	: Ser	c Ala	Ser 305	Met	Val	Gly	Thr	1 Lys		ı Arg	g Gln	Thr	Lys 315
Asp	Alá	a Lei	ı Phe	320		Leu	His	Asp	325		g Pro	Glr.	ı Asp	Arg 330
Phe	Sei	c Ile	∋ Ile	e Gly 335		Ser	Asn	Arç	340	e Lys	s Val	L Trp	b Lys	345
His	Let	ı Ile	e Sei	r Val 350		Pro	Asp	Se1	355		g Asp	o Gly	y Lys	360
Туг	Ile	e Hi	s Hi	s Met 365		Pro	Thr	Gly	7 Gly 370		r Ası	p Ile	e Ası	375
Ala	i Lei	u Gl:	n Ar	g Ala 380		e Arg	j Lev	ı Let	1 Asi 385	n Ly:	s Ту:	r Val	l Ala	His 390
				395	5				40	0				1 Thr 405
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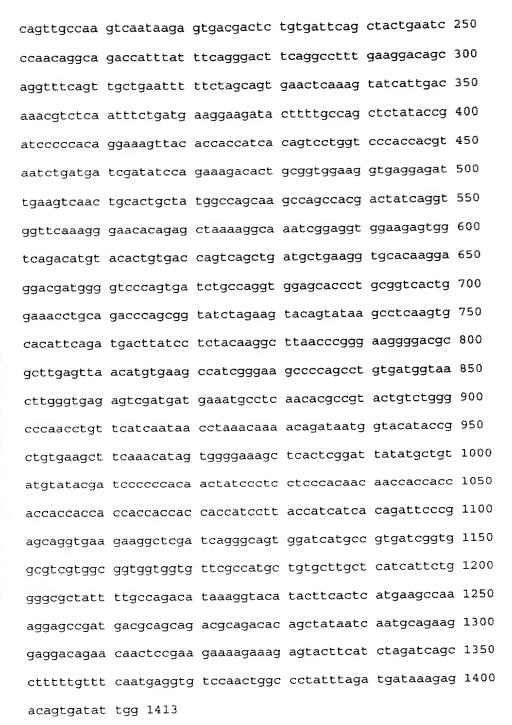
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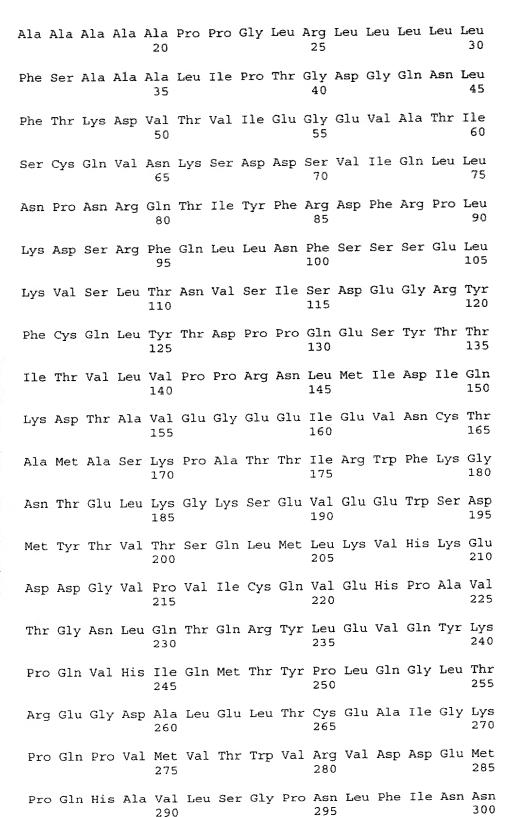
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Pro Pro Thr Thr Ile Pro Pro Pro Thr Thr Thr Thr Thr Thr Thr 335 340 345

Thr Thr Thr Thr Thr Ile Leu Thr Ile Ile Thr Asp Ser Arg 350 355 360

Ala Gly Glu Glu Gly Ser Ile Arg Ala Val Asp His Ala Val Ile 365 370 375

Gly Gly Val Val Ala Val Val Phe Ala Met Leu Cys Leu Leu 380 385 390

Ile Ile Leu Gly Arg Tyr Phe Ala Arg His Lys Gly Thr Tyr Phe 395 400 405

Thr His Glu Ala Lys Gly Ala Asp Asp Ala Ala Asp Ala Asp Thr 410 415 420

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Lys Glu Tyr Phe Ile 440

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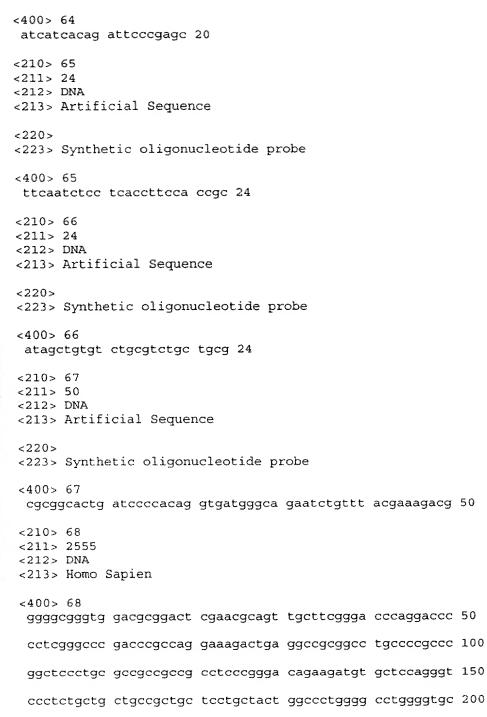
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Ser Gln Pro Gln Thr Val Phe Cys Thr Ala Arg Gln Gly Thr Thr 35 40 45

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Leu Leu Ala Leu Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu





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<211> 250

<212> PRT

<213> Homo Sapien

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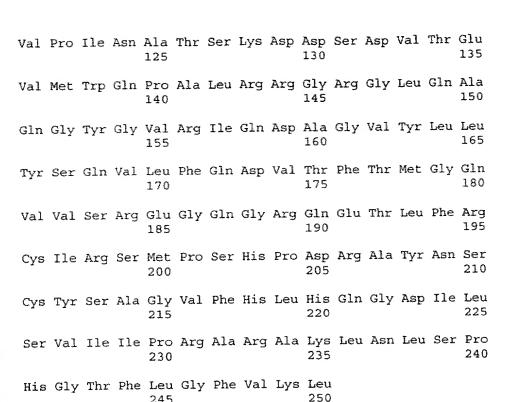
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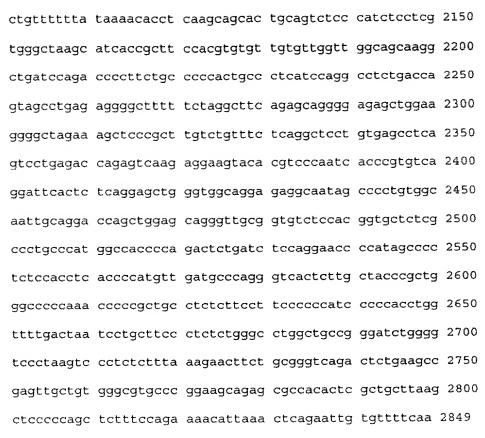
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<213> Homo Sapien

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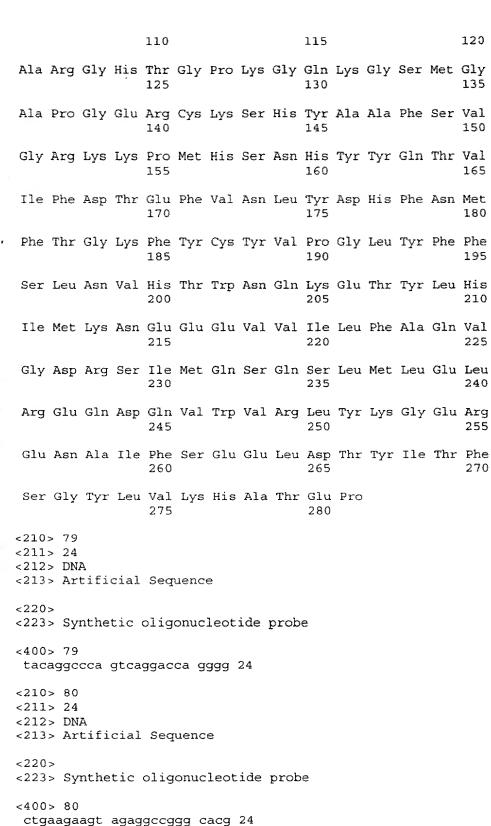
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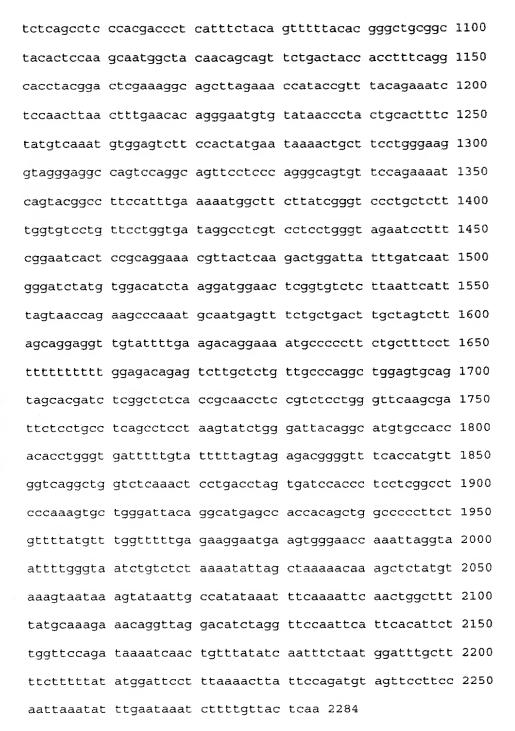
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<212> PRT

<213> Homo Sapien

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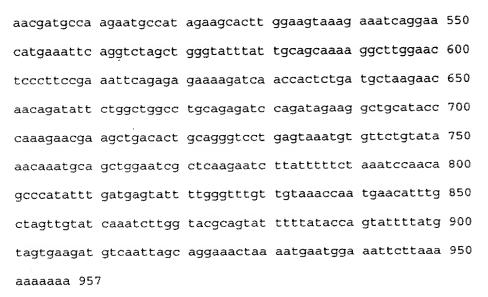
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310 305 Ser Leu Glu Thr Ile Pro Phe Thr Glu Ile Ser Asn Leu Thr Leu Asn Thr Gly Asn Val Tyr Asn Pro Thr Ala Leu Ser Met Ser Asn Val Glu Ser Ser Thr Met Asn Lys Thr Ala Ser Trp Glu Gly Arg Glu Ala Ser Pro Gly Ser Ser Ser Gln Gly Ser Val Pro Glu Asn 365 Gln Tyr Gly Leu Pro Phe Glu Lys Trp Leu Leu Ile Gly Ser Leu Leu Phe Gly Val Leu Phe Leu Val Ile Gly Leu Val Leu Leu Gly Arg Ile Leu Ser Glu Ser Leu Arg Arg Lys Arg Tyr Ser Arg Leu Asp Tyr Leu Ile Asn Gly Ile Tyr Val Asp Ile <210> 84 <211> 30 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 84 agggaggatt atccttgacc tttgaagacc 30 <210> 85 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 85 gaagcaagtg cccagctc 18 <210> 86 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 86 egggteettg etetttgg 18





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<213> Homo Sapien

<400> 91

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35 40 45

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Gln Lys Cys Asp His Trp Thr Pro Cys Pro Ser Asp Thr Tyr Ala 65 70 75

Tyr Arg Leu Leu Ser Gly Gly Gly Arg Ser Lys Tyr Ala Lys Ile 80 85 90

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Leu Phe Met Val Thr Tyr Asp Asp Gly Ser Thr Arg Leu Asn Asn 155 160 165 Asp Ala Lys Asn Ala Ile Glu Ala Leu Gly Ser Lys Glu Ile Arg 170 175 180

Asn Met Lys Phe Arg Ser Ser Trp Val Phe Ile Ala Ala Lys Gly 185 190 195

Leu Glu Leu Pro Ser Glu Ile Gln Arg Glu Lys Ile Asn His Ser 200 205 210

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